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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/817,535 | 04/02/2004 | Amir Levy | 400200 | 4873 |

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11/17/2005

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EXAMINER

KNOX, STEWART T

ART UNIT

PAPER NUMBER

3641

DATE MAILED: 11/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|--------------------------------------|------------------------------------|--|
| Office Action Summary | Application No. 10/817,535 | Applicant(s) LEVY ET AL. | |
| | Examiner Stewart T. Knox | Art Unit 3641 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) 12 and 13 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Claim Objections

1. Claim 1 is objected to because of the following informalities: in the second to last line, "prevention" should read, "prevent." Appropriate correction is required.
2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the unraveling of a drag means attached to a flat pin (as laid out in claim 10) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

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3. Claim 12 objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim cannot depend from any other multiple dependent claim. See MPEP § 608.01(n). Accordingly, claim 12 not been further treated on the merits.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1-13 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter that was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The description that “spin of the submunition grenade applies a centrifugal force on the firing pin” (claim 1, lines 27-28) is not enabled by the fact that the centrifugal force acts outwardly from the fuse, in a plane perpendicular to the firing pin. Clarification is required on how the centrifugal force causes longitudinal motion of the firing pin.

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 4-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 4-6 recite the limitation "the inertial

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force" in line 2 of each. There is insufficient antecedent basis for this limitation in the claim.

5. Claim 13 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite in that it fails to point out what is included or excluded by the claim language. This claim is an omnibus type claim.

Information Disclosure Statement

6. The information disclosure statement filed 7/23/2004 fails to comply with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609 because reference AS does not include a date. It has been placed in the application file, but the information referred to therein has not been considered as to the merits. Applicant is advised that the date of any re-submission of any item of information contained in this information disclosure statement or the submission of any missing element(s) will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the statement, including all certification requirements for statements under 37 CFR 1.97(e). See MPEP § 609.05(a).

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1-2 and 4-6 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Levy (4811664). Levy discloses an improved fuse for a submunition

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warhead including a firing pin (3) able to rotatably reciprocate between a forward and retracted position along threadedly engaged screw threads (9), a slider (14) with a cavity (23), a stab detonator (18), a time delay detonator (16), a spin activated swivel mounted striker (20) such that spin of the submunition grenade applies a centrifugal force to move the slider into the armed position (col. 3, lines 1-2), and a fully mechanical inertial releasable safety apparatus for preventing swiveling of said swivel mounted striker (pin 27 in combination with housing element 30). In regards to claim 2, Levy discloses a pyrotechnic combustion charge (19) and percussion cap (17). In regards to claim 4-6, Levy discloses inertial forces including a centrifugal force, a jolt resulting from launch, and a jolt resulting from expulsion from the cargo projectile.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 1, 3, and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Levy in view of Postler (4848235). In regards to claim 3, Levy discloses (b) in absence of the firing pin action, the time delay detonator ignition system still activates (col. 3 lines 18-24), and (c) spin of the submunition causes inertial forces, which cock the firing pin (cols. 5 and 6, lines 60-69 and lines 1-11), and a block (35) to prevent movement of the swivel striker and slider before launch, which must be manually removed. Levy does not disclose (a) the release of the swivel-mounted striker while the slider is in the safe

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position, in order to disarm the bomb, or a radially positioned centrifugally removable block to hold the swivel mounted striker in place (from claim 7). Postler teaches a radially positioned centrifugally removable block (fig. 3, elem. 58, and col. 9 lines 4-6) in order to provide the arming device with a safety block that will be removed automatically by centrifugal forces during flight. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the block (35) and housing (30) of Levy with the centrifugally removable block (58) of Postler. In regards to claim 3, such a modification would provide Levy with a swivel-mounted striker that will trigger the time delay detonator ignition system, if released by removing the block of Postler while the slider is in the safe position. By virtue of their proximity, the booster charge (18) will ignite the stab detonator (15) while the detonator is secured in the housing, disarming the grenade and rendering it harmless. In regards to claim 7, the block of Postler will provide Levy with a safety block that will be removed automatically by centrifugal forces during flight, thereby allowing the swivel mounted striker to activate the time delay detonator ignition system.

11. Claims 8/1-2, 4-6, 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Levy. In regards to claim 8, Levy discloses a pin (figs. 2 and 5, elem. 27) and a resilient retaining means (figs. 2 and 5, unmarked), able to reciprocate between an inner and outer position, said resilient retaining means for urging said flat pin towards said inner position, such that upon expulsion, inertial forces cause the pin to slide away (col. 6, lines 38-45) subsequently allowing the slider to be released which releases the swivel mounted striker. Levy does not, however, disclose that the inertial forces cause the pin to *slide out of the fuze housing*. It would have been an obvious matter of design

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choice to a person of ordinary skill in the art at the time the invention was made to have the head portion of the pin of Levy to slide out of the fuze housing when withdrawn, because applicant has not disclosed that having the pin slide out of the fuze housing provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected applicant's invention to perform equally well with the pin that does not leave the fuze housing as taught by Levy, because it also responds to inertial forces and allows the slider assembly to slide out of the fuze housing, and since it appears to be an arbitrary design consideration which fails to patentably distinguish over Levy. In regards to claim 9, Levy discloses inertial forces including centrifugal forces resulting from the spinning of the submunition grenade (col 6, lines 38-45). In regards to claim 10, Levy discloses that it is known to use drag-producing means to impart an inertial force in order to arm or activate a fuse (col. 2, lines 56-57). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use drag means interchangeably with centrifugal forces to provide an inertial force capable of removing the pin.

12. Claim 11/1-2, 4-6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Levy in view of Chemiere (5275101). Levy discloses the claimed invention including a fully mechanical inertially releasable safety apparatus comprising a spring-pin resiliently mounted within a cylinder and retractable there into, but does not disclose that the cylinder and spring are aligned with the longitudinal axis of the submunition grenade. Chimiere discloses a fully mechanical inertially releasable safety apparatus comprising a spring pin (fig. 4 elems. 19 and 20) resiliently mounted within a cylinder (29), said cylinder being aligned with the longitudinal axis of the submunition grenade in order that

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the inertial jolt occurring when the cargo projectile is launched overcomes the resistance of the spring and unlocks the slider, while holding it in place before launch (col. 5, lines 43-54 and 62-64). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the axially-oriented spring-pin (27) of Levy with the longitudinally-oriented spring-pin of Chemiere, since such a modification would provide the fuze of Levy with an inertially releasable safety apparatus sensitive to longitudinal forces.

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Kude (4986184) discloses a pin and resilient retaining means that extends out of the fuse housing.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stewart T. Knox whose telephone number is (571)272-8235. The examiner can normally be reached on Monday through Thursday, 7:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Carone can be reached on (571)272-6873. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

STK



MICHAEL J. [unclear]
SUPERVISORY PATENT EXAMINER